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INTERNATIONAL APPLICATION NO PCT/EP00/10502	INTERNATIONAL FILING DATE October 25, 2000	PRIORITY DATE CLAIMED October 26, 1999	
TITLE OF INVENTION PROCESS AND MACHINE FOR MERGING ORDERED BATCHES OF OBJECTS, IN PARTICULAR BATCHES OF MAIL ITEMS			
APPLICANT(S) FOR DO/EO/US Francois Gillet and Guy Forella			
<p>Applicant herewith submits to the United States Designated /Elected Office (DO/EO/US) the following items and other information:</p> <ol style="list-style-type: none"> <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(I). <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). <input checked="" type="checkbox"/> has been transmitted by the International Bureau. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). <input checked="" type="checkbox"/> A copy of the International Search Report (PCT/ISA/210) <ol style="list-style-type: none"> <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). <input checked="" type="checkbox"/> have been transmitted by the International Bureau <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. <input type="checkbox"/> have not been made and will not be made. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). <p>Items 11. to 16. below concern other document(s) or information included:</p> <ol style="list-style-type: none"> <input type="checkbox"/> A copy of the International Preliminary Examination Report (PCT/IPEA/409) <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. <input type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. <input type="checkbox"/> A substitute specification. <input type="checkbox"/> A change of power of attorney and/or address letter. <input checked="" type="checkbox"/> Other items or information: <ol style="list-style-type: none"> <input checked="" type="checkbox"/> a copy of the International Search Report (PCT/ISA/210) <input checked="" type="checkbox"/> a copy of the International Preliminary Examination Report (PCT/IPEA/409) <input checked="" type="checkbox"/> PCT application No. <u>PCT/EP00/10502</u> was published in English under publication number <u>WO 01/30514</u> on <u>May 3, 2001</u>. 			

INTERNATIONAL APPLICATION NO PCT/EP00/105021 U, U31430		INTERNATIONAL FILING DATE October 25, 2000		PRIORITY DATE CLAIMED October 26, 1999	
17. [X] The following fees are submitted: Basic National Fee (37 CFR 1.492(a)(1)-(5): Neither international preliminary examination fee (37 CFR 1.482) Nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO (1.492(a)(3)) \$1,040.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO (1.492(a)(5)) \$890.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO (1.492(a)(2)) \$740.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) (1.492(a)(1)) \$710.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 <div style="text-align: right;">ENTER APPROPRIATE BASIC FEE AMOUNT =</div>				CALCULATIONS PTO USE ONLY	
Surcharge of \$130.00 for furnishing the oath or declaration later than [] 20 [] 30 months from the earliest claimed priority date (37 C.F.R. 1.492)(e)).				\$0.00	
Claims	Number Filed	Number Extra	Rate		
Total Claims	8 - 20 =	0	X \$ 18.00	\$ 0.00	
Independent Claims	3 - 3 =	0	X \$ 84.00	\$ 0.00	
Multiple dependent claim(s) (if applicable)			+ \$280.00	\$ 280	
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Reduction by 1/2 for filing by small entity, if applicable				\$ 0.00	
SUBTOTAL =				\$ 1170.00	
Processing fee of \$130.00 for furnishing the English translation later than [] 20 [] 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	
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Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$ 0.00	
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				charged	\$
a. [X] A check in the amount of \$1170.00 to cover the above fees is enclosed. b. [] Please charge our Deposit Account No. <u>50-1145</u> in amount of \$ to cover the above fees. A copy of this sheet is enclosed. c. [X] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>50-1145</u> . A copy of this sheet is enclosed. NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status. SEND ALL CORRESPONDENCE TO: PITNEY, HARDIN, KIPP & SZUCH 711 Third Avenue, 20 th Floor New York, New York 10017-4014					
				Signature <i>Marta E. Delsignoff</i> Date <i>January 14, 2002</i> 32,689 Registration No.	

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Process and machine for merging ordered batches of objects, in particular batches of mail items

The invention pertains to a process for merging in particular batches of mail items such as letters, each previously ordered according to the order of distribution of the mail items in the mailman's round, so as to constitute a single batch of mail items which is also ordered according to the order of distribution of the mail items in the mailman's round.

In mail distribution offices, it is usual practice to merge or bundle together batches of mail items which originate from various sorting offices so as to constitute a single batch of mail items which is prepared for the mailman's round. Hitherto, the merging of these batches of mail items has been carried out manually and therefore requires a great deal of time. < - >

The purpose of the invention is to propose a process for automatically merging several batches of mail items with short transit time loops associated to the destacking units.

To this end, the subject of the invention is a process for merging in particular batches of mail items ~~each previously ordered according to the order of distribution of the mail items in the mailman's round, so as to constitute a single batch of mail items which is also ordered according to the order of distribution of the mail items in the mailman's round, consisting in~~

a) loading said batches of mail items to be merged respectively into corresponding destacking units each able to deliver in series the mail items of a corresponding batch,

b) destacking a certain number of mail items from each destacking unit and causing each destacked mail item to travel past a device for reading the postal address of the mail item before transferring it to a dynamic-storage magazine which is associated with said destacking unit and in which the mail items are moved in series around a storage loop;

c) analyzing in a control/command unit of the destacking units and of the dynamic-storage magazines, the postal addresses of the mail items pending in the dynamic-storage magazines so as to control the transferring of these mail items to a conveyor to which the dynamic storage magazines are linked in parallel, according to a certain sequence in such a way that the mail items exit the conveyor in series according to their order of distribution in the mailman's round,

< EP-834354 discloses a process according to the preamble of claim 1 wherein the destacking-units, disposed in succession along the conveyor path, deliver the objects directly to the conveyor in a time sequence determined by their transport along the conveyor path. US-4244672 discloses a process for merging batches of objects wherein the destacking units deliver the objects to the conveyor through a recirculation buffer. >

AMENDED SHEET

~~d) repeating steps b) and c) until the destacking units are completely emptied~~ *as defined in claim 1.*

With the process according to the invention, several batches of mail items can be automatically merged in a single pass. The postal address recovered by the reading device can be a bar code which is now widely used in postal sorting offices.

~~According to a particular mode of implementation of the process~~ according to the invention, in step b) indicated above, said mail items are transferred from a destacking unit to ~~at least two dynamic-storage magazines each having a storage loop, these two dynamic-storage magazines being linked in parallel to said destacking unit and to the conveyor~~. It has been observed that it is preferable to use several storage loops of low storage capacity associated with a destacking unit rather than a single storage loop of larger storage capacity so as to transfer the mail items more speedily to the conveyor. The number of storage loops associated with a destacking unit and the storage capacity of each loop is a compromise between the speed of merging of the batches of mail items and the interclassification window required between batches of mail items.

An exemplary implementation of the process according to the invention is described hereinafter in detail and illustrated in the drawings.

Figure 1 shows very diagrammatically a machine for merging batches of mail items according to the process of the invention.

Figure 2 is a flowchart illustrating the manner of operation of the machine shown in Figure 1.

In Figure 1, the machine for merging batches of mail items according to the process of the invention comprises several destacking units, here two destacking units D1 and D2, each able to serialize mail items of a batch of mail items which is preordered for the mailman's round, here the batches L1 and L2 which are loaded respectively into the destacking units D1 and D2.

The exit of each destacking unit is linked to one or more dynamic-storage magazines which is or which are associated with the relevant destacking unit. In each dynamic-storage magazine, the mail items indicated by A are moved continuously in series around a storage loop.

In the example of Figure 1, the exit of the destacking unit D1 is linked to two storage loops M11 and M12 by way of a series conveyor C1, the entrances E of the two storage loops M11 and M12 being linked in parallel to the conveyor C1.

The destacking unit D2 is linked to two other storage loops M21 and M22 by way of another series conveyor C2. The entrances E of the two storage loops M21 and M22 are linked in parallel to the conveyor C2.

Each storage loop M11 to M22 comprises an entrance E and an exit S disposed at two points of the loop and is able to store a certain number of mail items, in the present case three mail items. Each storage magazine M11 to M22 comprises a routing flap (not represented) disposed at the entrance point E of the storage loop and a routing flap (not represented) disposed at the exit point S of the storage loop allowing the introduction or the extraction of a mail item in the storage loop.

A first reading device DL1 is disposed along the conveyor C1 between the exit of the destacking unit D1 and the entrance E of the storage loop M11 furthest upstream on the conveyor C1 so as to read the postal address of each mail item extracted from the destacking unit D1 which will be transferred to the storage loops M11 or M12.

A second reading device DL2 is disposed along the conveyor C2 between the exit of the destacking unit D2 and the entrance E of the storage loop M21 furthest upstream on the conveyor C2 so as to read the postal address of each mail item extracted from the destacking unit D2 which will be transferred to the storage loops M21 or M22.

The reading devices DL1 and DL2 can be devices for reading matrix codes, for example bar codes.

The exits S of the storage loops M11 to M22 are linked in parallel to an exit conveyor CS in which the mail items are conveyed in series.

The conveyors C1, C2 and CS can be belt-type conveyors known per se. The dynamic-storage magazines M11 to M22 can also be embodied in the form of belt-type conveyors.

A control/command unit U synchronizes the transferring of the mail items from the destacking units D1 and D2 to the dynamic-storage magazines M11 to M22, recovers the postal addresses read (or the bar codes) by the reading devices DL1 and DL2 and synchronizes the transferring of the mail items from the dynamic-storage magazines M11 to M22 to the exit conveyor CS so that the mail items A exit the conveyor CS according to their order of distribution in the mailman's round.

Each link between the exit S of a storage loop and the exit conveyor CS can include a delay line R mounted in parallel with the link and which serves to compensate for the differences in path length of the mail items between the exits S of the storage loops M11 to M22 and the exit of the conveyor CS so as to maintain a constant spacing between the mail items moved in series in the conveyor CS.

Moreover, another dynamic-storage magazine M3 having a storage loop which is mounted in parallel with the conveyor CS downstream of the point of

confluence with the dynamic-storage magazine M22 in such a way as to make it possible to recover certain defects of classification of the mail items in the batches L1 and L2 to be merged. It is of course understood that the delay lines R and the dynamic-storage magazine M3 are under the control of the control/command unit U.

The exit of the conveyor CS can feed the entrance to a device for stacking mail items so as to produce a stack of mail items which is ready for the mailman's round.

Figure 2 illustrates the manner of operation of the machine shown in Figure 1.

The batch L1 of mail items is therefore loaded into the destacking unit D1 and the batch L2 of mail items is loaded into the destacking unit D2. These two batches have previously been ordered according to the order of distribution of the mail items in the mailman's round.

If $N1/2$ corresponds to the storage capacity in terms of number of mail items of a storage loop such as M11 (in the case of the example in Figure 1, $N1/2$ is equal to 3), the control/command unit U acts on the units D1 and D2 so as to serialize on exit from D1, $N1$ mail items, this being symbolized by the block 10, and on exit from D2, $N1$ mail items, this being symbolized by the block 20.

The postal addresses (or corresponding bar codes) of the $N1$ mail items serialized on exit from D1 and traveling past the reading device DL1 are recovered by the control/command unit U, this being symbolized by the block 11.

The postal addresses (or corresponding bar codes) of the $N1$ mail items serialized on exit from D2 and traveling past the reading device DL2 are also recovered by the control/command unit U, this being symbolized by the block 21.

In tandem with their destacking from D1, $N1/2$ first mail items A are initially transferred into the storage loop M11, this being represented by the block 12 and the following $N1/2$ mail items A destacked from D1 are transferred into the storage loop M12, this being symbolized by the block 13.

At the same time, in tandem with their destacking from D2, $N1/2$ first mail items A are initially transferred into the storage loop M21, this being represented by the block 22 and the following $N1/2$ mail items A destacked from D2 are transferred into the storage loop M22, this being symbolized by the block 23.

The control/command unit U keeps in memory a logical representation of the mailman's round in respect of the mail items A loaded into D1 and D2, analyzes the postal addresses recovered by the reading devices DL1 and DL2 so as to reorder them according to the mailman's round held in logic form in memory, this being symbolized by the block 30, and command accordingly, on the basis of

these exit postal addresses in conjunction with the location of the mail items in the storage loops, the extraction according to the appropriate sequence of the mail items from the loops M11 to M22 and their transfer to the conveyor CS so that these mail items exit the conveyor CS according to their order of distribution in the mailman's round.

Since the batches L1 and L2 are already preordered, the storage loop M11 is normally emptied before the storage loop M12 and the storage loop M21 is normally emptied before the storage loop M22, so that the storage loops M11 and M12 or M21 and M22 can operate alternately.

Thus, when the storage loop M11 is completely emptied, this being symbolized by the block 31, the control/command unit U acts on the unit D1 so as to serialize on exit from D1, N1/2 mail items, this being symbolized by the block 14, which are transferred into the storage loop M11, this being symbolized by the block 16, after being made to travel past DL1 for the reading of the postal addresses, this being symbolized by the block 15. Likewise, when the storage loop M21 is completely emptied, the control/command unit U acts on the unit D2 so as to serialize on exit from D2, N1/2 mail items, this being symbolized by the block 24, which are transferred into the storage loop M21, this being symbolized by the block 26, after being made to travel past DL2 for the reading of the postal addresses, this being symbolized by the block 25.

The block 32 symbolizes the analysis in the control/command unit U of the new postal addresses recovered by DL1 and DL2 for the corresponding transferring in sequence of the mail items to the conveyor CS.

Now, when the storage loop M12 is completely emptied, this being symbolized by the block 33, the control/command unit U acts on the unit D1 so as to serialize on exit from D1, N1/2 mail items, this being symbolized by the block 17, which are transferred into the storage loop M11, this being symbolized by the block 19, after being made to travel past DL1 for the reading of the postal addresses, this being symbolized by the block 18. Likewise, when the dynamic storage loop M22 is completely emptied, the control/command unit U acts on the unit D2 so as to serialize on exit from D2, N1/2 mail items, this being symbolized by the block 24, which are transferred into the storage loop M21, this being symbolized by the block 26, after being made to travel past DL2 for the reading of the postal addresses, this being symbolized by the block 25. The block 34 symbolizes the analysis in the control/command unit U of the postal addresses recovered by DL1 and DL2 for the corresponding transferring in sequence of the mail items to the conveyor CS.

The procedure loops back around the block 31 until D1 and D2 are completely emptied.

With the procedure indicated above, the interclassification window of the two batches of mail items corresponds to the storage capacity of two storage loops (6 mail items in the exemplary case of Figure 1).

Certain defects of classification in the batches of mail items L1 or L2 may be recovered by the control/command unit U by using the storage loop M3 whose capacity may be greater than that of one of the storage loops M11 to M22, the storage capacity of the loop M3 corresponding to the shifting of a mail item which it is possible to recover.

The process according to the invention can ideally be applied in respect of the merging of previously ordered batches of objects other than batches of mail items, for example, baggage items or the like, provided that each object bears a cue allowing its classification according to a certain sequence.

AMENDED CLAIMS

1/ Process for merging batches of objects (L1,L2), each previously ordered according to a certain classification of the objects (A), so as to constitute a single batch of objects ordered according to said classification, in which process said batches are loaded in destacking units (D1,D2) which deliver said objects in series and in which each object destacked from a destacking unit travels past a device (DL1,DL2) for reading a classification cue of said object to be transferred to a conveyor (CS) linked to said destacking units in a such a way that the objects exit the conveyor in series according to the order corresponding to said classification, characterized in that said objects destacked from a destacking unit (D1,D2) are transferred to said conveyor (CS) through at least a first (M11,M21) and a second (M12,M22) dynamic-storage magazine linked and associated to said destacking unit, said destacked objects moving in series into each dynamic-storage magazine around a storage loop, in that a control/command unit (U) controls each destacking unit (D1,D2) and the first and second dynamic-storage magazine (M11,M12 ;M21,M22) associated to said destacking unit for loading said first dynamic-storage magazine (M11,M21) with a certain number of first ordered objects destacked from said destacking unit and for loading said second dynamic-storage magazine (M12,M22) with a certain amount of following ordered objects destacked from said destacking unit, and in that said control/command unit (U) analyses the classifying cues for the objects pending in the dynamic-storage magazines to cause said first dynamic-storage magazine (M11,M21) associated to a destacking unit to be emptied to said conveyor before said second dynamic-storage magazine (M12,M22) associated to said destacking unit to be emptied to said conveyor, the loading and the emptying of said dynamic-storage magazines being repeated until said destacking units are completely emptied.

2/ Process according to claim 1, in which said first (M11,M21) and second (M12 ,M22) dynamic-storage magazine linked and associated to a destacking unit (D1,D2) operate alternatively to be loaded with destacked objects and emptied to said conveyor.

3/ Process according to any one of claims 1 to 2, in which said objects are mail items and in that said classification is an order of distribution of mail items in the mailman's round.

4/ Machine for carrying out the process according to any one of claims 1 to 3, in which said first (M11,M21) and second (M12,M22) dynamic-storage magazine linked and associated to a destacking unit (D1,D2) have corresponding entrances (E) linked in parallel to said destacking unit and corresponding exits (S) linked in parallel to said conveyor (CS), and in which a device (DL1,DL2) for reading a classification cue is disposed between each destacking unit (D1,D2) and its first and second associated dynamic-storage magazine (M11,M12 ;M21,M22).

5/ Machine according to claim 4, in which a delay line (R) is mounted between the exit (S) of each dynamic-storage magazine (M11,M12,M21,M22) and said conveyor (CS).

6/ Machine according to any one of claims 4 to 5, in which a further dynamic-storage magazine (M3) is mounted in parallel with said conveyor (CS) downstream said dynamic-storage magazines (M11,M12,M21,M22).

7/ Machine according to claim 6, in which said further dynamic-storage magazine (M3) comprises a storage loop.

8/ Machine according to any one of claims 4 to 7, in which said first and second dynamic-storage magazine (M11,M12 ;M21,M22) linked and associated to a destacking unit (D1,D2) have the same storage capacity.

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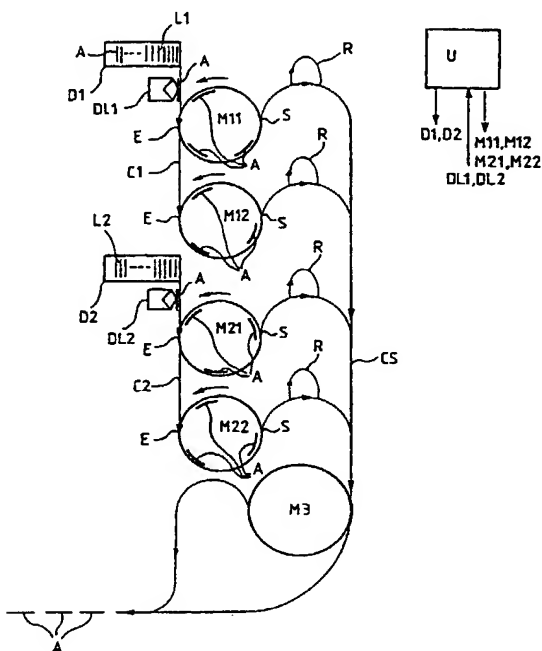
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(54) Title: **PROCESS AND MACHINE FOR MERGING ORDERED BATCHES OF OBJECTS, IN PARTICULAR BATCHES OF MAIL ITEMS**

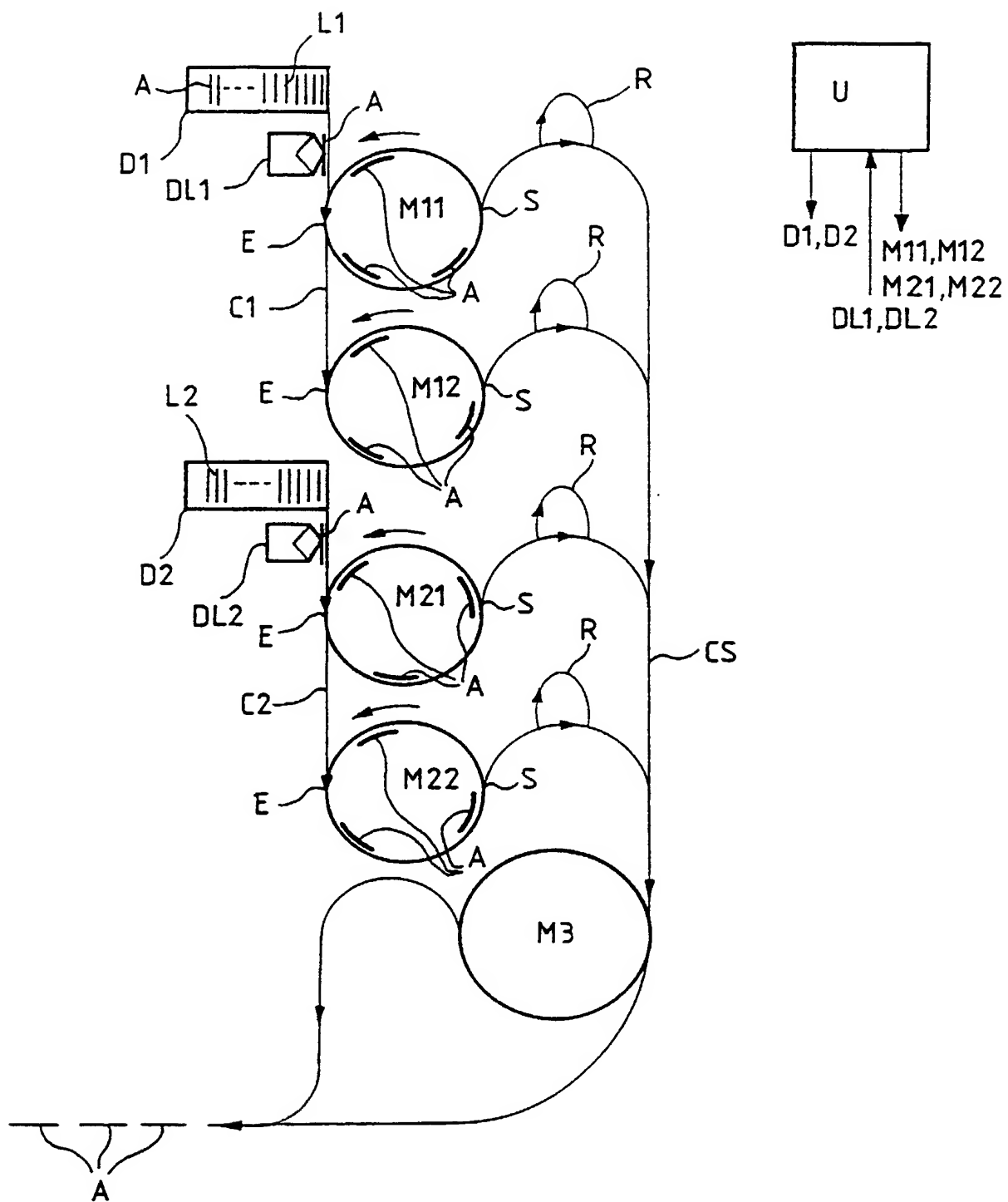


(57) Abstract: The machine for merging batches of objects, in particular batches (L1, L2) of mail items (A) previously ordered according to their order of distribution in the mailman's round, so as to constitute a single batch of mail items which is ordered according to the mailman's round comprises: a) destacking units (D1, D2), b) linked to the exit of each destacking unit, one or more dynamic-storage magazines (M11-M22) in each of which the items are moved in series around a storage loop, and interposed between each destacking unit and a dynamic-storage magazine, a device (DL1, DL2) for reading a classifying cue on each destacked object; c) a conveyor (CS) in which said mail items are moved in series and to which the dynamic-storage magazines are linked in parallel, d) a control/command unit (U) for the destacking units and for the dynamic-storage magazines which, on the basis of the classifying cues read by the reading devices, controls the transferring of the mail items from the destacking units to the dynamic-storage magazines and then from the dynamic-storage magazines to the conveyor.

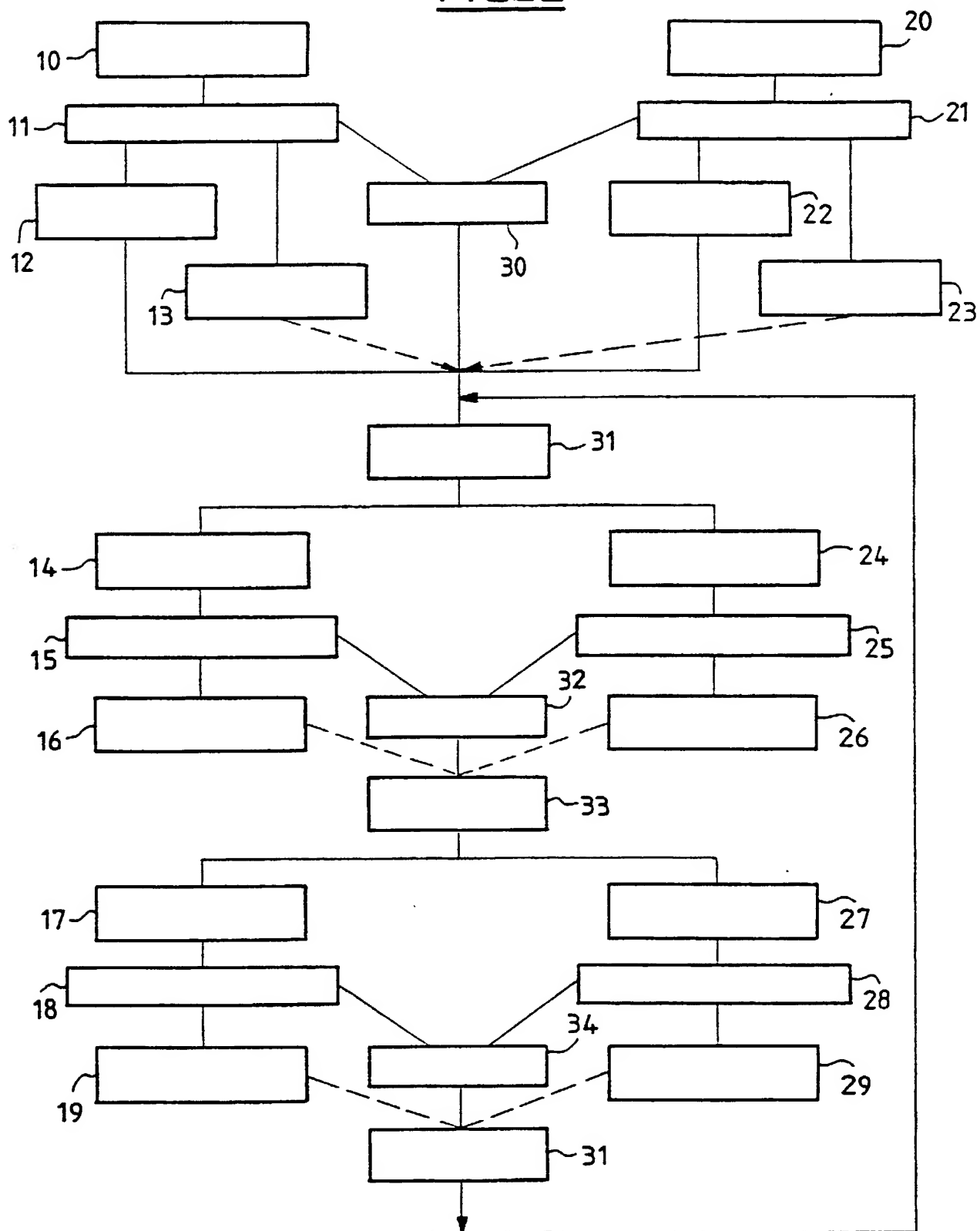
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1/2

FIG_1



2/2
FIG_2





10031430.051002

COMBINED DECLARATION AND POWER OF ATTORNEY

(Original, Design, National Stage of PCT, Divisional, Continuation or C-I-P Application)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name; I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

PROCESS AND MACHINE FOR MERGING ORDERED BATCHES OF OBJECTS, IN PARTICULAR BATCHES OF MAIL ITEMS

This declaration is of the following type:

- ☐ original
- ☐ design
- ☒ national stage of PCT/EP00/10502.
- ☐ divisional
- ☐ continuation
- ☐ continuation-in-part (C-I-P)

the specification of which: *(complete (a), (b), or (c))*

- (a) ☐ is attached hereto.
- (b) ☒ was filed on 1/14/02 as Application Serial No. 10/031,430 and was amended on *(if applicable)*.
- (c) ☐ was described and claimed in PCT International Application No. _____ filed _____ on and was amended on *(if applicable)*.

Acknowledgment of Review of Papers and Duty of Candor

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of the subject matter claimed in this application in accordance with Title 37, Code of Federal Regulations § 1.56.

☐ In compliance with this duty there is attached an information disclosure statement.
37 CFR 1.98.

Priority Claim

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT International Application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT International Application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application on which priority is claimed

(complete (d) or (e))

- (d) ☐ no such applications have been filed.
(e) ☒ such applications have been filed as follows:

PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO SAID APPLICATION			
COUNTRY	APPLICATION NO.	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)
			PRIORITY CLAIMED UNDER 35 USC 119 <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/>
			<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/>
			<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/>
ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO SAID APPLICATION			
France	N 99 13 362	October 26, 1999	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/>
			<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/>
			<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/>

Claim for Benefit of Prior U.S. Provisional Application(s)

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

Provisional Application Number	Filing Date

Claim for Benefit of Earlier U.S./PCT Application(s) under 35 U.S.C. 120

(complete this part only if this is a divisional, continuation or C-I-P application)

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior application(s) in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose information as defined in Title 37, Code of Federal Regulations, § 1.56 which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PCT/EP00/10502	October 25, 2000	pending
(Application Serial No)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No)	(Filing Date)	(Status) (patented, pending, abandoned)

Power of Attorney

As a named inventor, I hereby appoint Gerald Levy, Reg. No. 24,419; Ronald E. Brown, Reg. No. 32,200; Marta E. Delsignore, Reg. No. 32,689; John Gulbin, Reg. No. 33,189; Lindsay Adams, Reg. No. 36,425; and Michael P. Stanley, Reg. No. 47,108, of the firm of Pitney, Hardin, Kipp & Szuch, with offices at 685 Third Avenue, New York, New York 10117-4024, as attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith

SEND CORRESPONDENCE TO: <u>Pitney, Hardin, Kipp & Szuch</u> <u>685 Third Avenue, New York, NY 10017</u>	DIRECT TELEPHONE CALLS TO: <u>Pitney, Hardin, Kipp & Szuch</u> <u>(212) 297-5800</u>
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

100 FULL NAME OF SOLE OR FIRST INVENTOR	LAST NAME Gillet	FIRST NAME Francois	MIDDLE NAME	
RESIDENCE & CITIZENSHIP	CITY Lyon <i>FRX</i>	STATE or FOREIGN COUNTRY France	COUNTRY OF CITIZENSHIP France	
POST OFFICE ADDRESS	POST OFFICE ADDRESS 120 bis, rue du Commandant Charcot	CITY Lyon	STATE or COUNTRY France	ZIP CODE F-69005
DATE 18-04-02	SIGNATURE OF INVENTOR <i>[Signature]</i>			
200 FULL NAME OF THIRD JOINT INVENTOR, IF ANY	LAST NAME Forella	FIRST NAME Guy	MIDDLE NAME	
RESIDENCE & CITIZENSHIP	CITY Saint Peray <i>FRX</i>	STATE or FOREIGN COUNTRY France	COUNTRY OF CITIZENSHIP France	
POST OFFICE ADDRESS	POST OFFICE ADDRESS Les Champs	CITY Saint Peray	STATE or COUNTRY France	ZIP CODE F-07130
DATE 22-4-02	SIGNATURE OF INVENTOR <i>[Signature]</i>			
FULL NAME OF FOURTH JOINT INVENTOR, IF ANY	LAST NAME	FIRST NAME	MIDDLE NAME	
RESIDENCE & CITIZENSHIP	CITY	STATE or FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP	
POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE or COUNTRY	ZIP CODE
DATE	SIGNATURE OF INVENTOR			
FULL NAME OF FIFTH JOINT INVENTOR, IF ANY	LAST NAME	FIRST NAME	MIDDLE NAME	
RESIDENCE & CITIZENSHIP	CITY	STATE or FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP	
POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE or COUNTRY	ZIP CODE
DATE	SIGNATURE OF INVENTOR			
FULL NAME OF SIXTH JOINT INVENTOR, IF ANY	LAST NAME	FIRST NAME	MIDDLE NAME	
RESIDENCE & CITIZENSHIP	CITY	STATE or FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP	
POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE or COUNTRY	ZIP CODE
DATE	SIGNATURE OF INVENTOR			

Check proper box(es) for any added page(s) forming a part of this declaration

- ☐ Signature for ninth and subsequent joint inventors. Number of pages added _____.
- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added _____.
- ☐ Signature for inventor who refuses to sign, or cannot be reached, by person authorized under 37 CFR 1.47. Number of pages added _____.